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Docket No. 020425

Serial No. 10/792,162

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A method of performing position determination in a wireless communication network with repeaters, wherein the repeater includes circuitry that causes internal repeater delays, and additional delays are defined responsive to the internal repeater delays and the transmission time from the base station to the repeater, and wherein information for additional delays associated with the repeater is available, comprising:

identifying a signal received by a wireless terminal as being from a repeater;

obtaining a position of the repeater; and

processing a time measurement for the repeater to remove the additional delays associated with the repeater;

deriving a more accurate position estimate for the terminal based on the time measurement for the repeater, with the additional delays removed, and time measurements for at least two additional transmitters received by the terminal; and

providing the position of the repeater as a position estimate for the terminal if a more accurate position estimate for the terminal cannot be obtained.

2. (Original) The method of claim 1, further comprising:

providing a position uncertainty for the repeater as an uncertainty in the position estimate for the terminal if the more accurate position estimate for the terminal cannot be obtained.

3. (Currently amended) ~~The method of claim 1,~~ A method of performing position determination in a wireless communication network with repeaters, comprising:

identifying a signal received by a wireless terminal as being from a repeater;

obtaining a position of the repeater; and

providing the position of the repeater as a position estimate for the terminal if a more accurate position estimate for the terminal cannot be obtained;

wherein the repeater includes circuitry that causes internal repeater delays, and additional delays are defined responsive to the internal repeater delays and the transmission

Docket No. 020425

Serial No. 10/792,162

time from the base station to the repeater, and wherein the more accurate position estimate for the terminal cannot be obtained due to lack of information for additional delays associated with the repeater.

4. (Original) The method of claim 1, wherein the more accurate position estimate for the terminal cannot be obtained due to lack of a required number of measurements to perform trilateration for the terminal.
5. (Original) The method of claim 1, further comprising:
determining whether the terminal is in an indoor or an outdoor environment; and
providing the position of the repeater as the position estimate for the terminal if the terminal is deemed to be in an indoor environment.
6. (Original) The method of claim 5, wherein the terminal is deemed to be in an indoor environment if the repeater is an indoor repeater.
7. (Currently amended) A method of performing position determination in a wireless communication network with repeaters, comprising:
identifying a signal received by a wireless terminal as being from a repeater;
obtaining a position of the repeater;
providing the position of the repeater as a position estimate for the terminal if a more accurate position estimate for the terminal cannot be obtained;
determining whether the terminal is in an indoor or an outdoor environment based on the number of signals received by the terminal from satellites and base stations; ~~and~~ and
providing the position of the repeater as the position estimate for the terminal if the terminal is deemed to be in an indoor ~~environment~~ environment.
8. (Original) The method of claim 1, further comprising:
comparing received signal strength for the repeater against a threshold; and
providing the position of the repeater as the position estimate for the terminal if the received signal strength exceeds the threshold.

Docket No. 020425

Serial No. 10/792,162

9. (Original) The method of claim 8, wherein the threshold is set based on an expected received signal strength for the repeater at a particular range from the repeater.

10. (Canceled)

11. (Original) The method of claim 1, wherein the identifying is based on a pseudo-random number (PN) sequence used for the signal received from the repeater.

12. (Original) The method of claim 1, wherein the identifying is based on modulation characteristics of the signal received from the repeater.

13. (Original) The method of claim 1, wherein the identifying is based on a time measurement obtained at the terminal for the signal received from the repeater.

14. (Original) The method of claim 1, wherein the identifying is based on a signal strength measurement obtained at the terminal for the signal received from the repeater.

15. (Original) The method of claim 1, wherein the wireless communication network is a CDMA network.

16. (Original) An apparatus in a wireless communication network with repeaters, comprising:

means for identifying a signal received by a wireless terminal as being from a repeater;

means for obtaining a position of the repeater; and

means for providing the position of the repeater as a position estimate for the terminal if a more accurate position estimate for the terminal cannot be obtained;

wherein the repeater includes circuitry that causes internal repeater delays, and additional delays are defined responsive to the internal repeater delays and the transmission time from the base station to the repeater, and further comprising:

means for processing a time measurement for the repeater to remove additional delays associated with the repeater; and

Docket No. 020425

Serial No. 10/792,162

means for deriving the more accurate position estimate for the terminal based on the time measurement for the repeater, with the additional delays removed, and time measurements for at least two additional transmitters received by the terminal.

17. (Currently amended) The apparatus of claim 16, further comprising:
means for determining whether the terminal is in an indoor or an outdoor environment; and
means for providing the position of the repeater as the position estimate for the terminal if the terminal is deemed to be in an indoor environment.

18. (Original) The apparatus of claim 16, further comprising:
means for comparing received signal strength for the repeater against a threshold;
and
means for providing the position of the repeater as the position estimate for the terminal if the received signal strength exceeds the threshold.

19. (Canceled)

20. (Currently amended) A program embodied on a tangible storage medium, the program comprising executable instructions to:
identify a signal received by a wireless terminal as being from a repeater;
obtain a position of the repeater; and
provide the position of the repeater as a position estimate for the terminal if a more accurate position estimate for the terminal cannot be obtained;-
determine whether the terminal is in an indoor or an outdoor environment based on the number of signals received by the terminal from satellites and base stations; and
provide the position of the repeater as the position estimate for the terminal if the terminal is deemed to be in an indoor environment; environment.

21. (Currently amended) A device in a wireless communication network with repeaters, comprising:

Docket No. 020425

Serial No. 10/792,162

a memory unit operative to store a database of information for the repeaters in the network; and

a processor operative to identify a signal received by a wireless terminal as being from a repeater, obtain a position of the repeater from the database, and provide the position of the repeater as a position estimate for the terminal if a more accurate position estimate for the terminal cannot be obtained; determine whether the terminal is in an indoor or an outdoor environment based on the number of signals received by the terminal from satellites and base stations, and provide the position of the repeater as the position estimate for the terminal if the terminal is deemed to be in an indoor environment.

Claims 22 – 25 (Canceled)

26. (New) An apparatus for performing position determination in a wireless communication network with repeaters, comprising:

means for identifying a signal received by a wireless terminal as being from a repeater;

means for obtaining a position of the repeater;

means for providing the position of the repeater as a position estimate for the terminal if a more accurate position estimate for the terminal cannot be obtained;

means for determining whether the terminal is in an indoor or an outdoor environment based on the number of signals received by the terminal from satellites and base stations; and

means for providing the position of the repeater as the position estimate for the terminal if the terminal is deemed to be in an indoor environment.